



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/549,912

09/20/2005

Roberto Alvarez Arevalo

36-1925

4788

23117

7590

08/05/2008

NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

MCLEOD, MARSHALL M

ART UNIT

PAPER NUMBER

2157

MAIL DATE

DELIVERY MODE

08/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/549,912	Applicant(s) ALVAREZ AREVALO ET AL.	
	Examiner MARSHALL MCLEOD	Art Unit 2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

C Response to Amendment

1. This Office action has been issued in response to amendment filed 22 April 2008. Claims 1-10 are pending in this application. Applicants' arguments have been carefully and respectfully considered in light of the instant amendment and are persuasive, as they relate to the specification and claim objections and the claim rejections under 35 U.S.C. 101 and 112 second paragraph. As such the examiner withdraws the specification and claim objections and the claim rejections under 35 U.S.C. 101 and 112 second paragraph.

Priority

2. Examiner acknowledges applicant's foreign priority based on United Kingdom 0306973.9 filed 3/26/2003.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aharoni et al. (Patent No US 6,014,694), hereinafter Aharoni, in view of Zhu et al. (Patent. No US 5534937), hereinafter Zhu.**

5. With respect to claim 1, Aharoni discloses A method of transmitting an encoded sequence over a network to a terminal (Aharoni, Column 2, lines 16-20), comprising

- a. storing a plurality of encoded versions of the same sequence (Aharoni, Column 2, lines 29-32), wherein each version comprises a plurality of discrete portions of data (Aharoni, Column 2, lines 32-39; i.e. discrete portions of data = subset of levels) and each version corresponds to a respective different degree of compression (Aharoni, Column 2, lines 20-21; i.e. different degree of compression = ...the system adjusts the compression ratio);
- b. transmitting a current one of said versions (Aharoni, Column 7, line 67, and continued through to Column 8, lines 1-3);
- c. ascertaining the data rate permitted by the network (Aharoni, Column 11, lines 30-37);
- d. selecting one of said versions for transmission, in dependence on the results of said comparisons; and transmitting the selected version (Aharoni, Column 2, lines 60-61).

Aharoni does not disclose ascertaining the state of fullness of a receiving buffer at the terminal; for at least one candidate version, computing in respect of at least one discrete portion thereof as yet unsent the maximum value of current buffer fullness that would be needed to avoid buffer

underflow were any number of portions starting with that portion to be sent at the currently ascertained permitted rate; comparing the determined maximum needed buffer fullness value(s) with the current buffer fullness state.

However, Zhu discloses ascertaining the state of fullness of a receiving buffer at the terminal (Column 3, lines 3-14; See Figure 2 also); for at least one candidate version, computing in respect of at least one discrete portion thereof as yet unsent the maximum value of current buffer fullness that would be needed to avoid buffer underflow were any number of portions starting with that portion to be sent at the currently ascertained permitted rate (Column 3, lines 3-16); comparing the determined maximum needed buffer fullness value(s) with the current buffer fullness state (Column 3, lines 16-26).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the teachings of Aharoni with the teachings of Zhu in order to have an efficient stream selection system and increase the quality and reliability of stream transmissions.

6. With respect to claim 2, Aharoni as modified discloses a method of transmitting an encoded sequence over a network to a terminal (Aharoni, Column 2, lines 16-20), comprising
 - e. storing a plurality of encoded versions of the same sequence (Aharoni, Column 2, lines 29-32), wherein each version comprises a plurality of discrete portions of data (Aharoni, Column 2, lines 32-39; i.e. discrete portions of data = subset of levels) and each version corresponds to a respective different degree of compression (Aharoni,

Art Unit: 2157

Column 2, lines 20-21; i.e. different degree of compression = ...the system adjusts the compression ratio);

f. were any number of portions starting with that portion to be sent at the respective nominal rate (Aharoni, Column 17, lines 52-59);

g. transmitting a current one of said versions (Aharoni, Column 7, line 67, and continued through to Column 8, lines 1-3);

h. ascertaining the data rate permitted by the network (Aharoni, Column 11, lines 30-37);

i. selecting one of said versions for transmission, in dependence on the results of said comparisons (Aharoni, Column 2, lines 60-61); and transmitting the selected version (Aharoni, Column 2, lines 60-61).

Aharoni does not disclose that for each version and for each of a plurality of nominal transmitting rates, computing in respect of at least one discrete portion thereof the maximum value of current buffer fullness that would be needed to avoid receiving buffer underflow at the terminal; storing said maximum needed buffer fullness values; ascertaining the state of fullness of a receiving buffer at the terminal; for at least one candidate version, using the ascertained permitted data rate and the stored maximum needed buffer fullness values to estimate a respective maximum needed buffer fullness value corresponding to said ascertained permitted data rate; comparing the estimated maximum needed buffer fullness values with the ascertained buffer state.

Art Unit: 2157

However Zhu discloses that for each version and for each of a plurality of nominal transmitting rates, computing in respect of at least one discrete portion thereof the maximum value of current buffer fullness that would be needed to avoid receiving buffer underflow at the terminal (Zhu, Column 3, lines 3-16); storing said maximum needed buffer fullness values (Zhu, Column 7, lines 50-63); ascertaining the state of fullness of a receiving buffer at the terminal (Zhu, Column 3, lines 3-14; See Figure 2 also); for at least one candidate version, using the ascertained permitted data rate and the stored maximum needed buffer fullness values to estimate a respective maximum needed buffer fullness value corresponding to said ascertained permitted data rate (Zhu, Column 3, lines 3-16); comparing the estimated maximum needed buffer fullness values with the ascertained buffer state (Zhu, Column 3, lines 16-26);

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the teachings of Aharoni with the teachings of Zhu in order to have an efficient stream selection system and increase the quality and reliability of stream transmissions.

7. With respect to claim 3, it is rejected for the same reasons as claim 1 above. In addition Aharoni as modified discloses wherein maximum needed buffer fullness determination is performed (Zhu, Column 3, lines 3-14) only for selected ones of said portions at which a version change is to be permitted (Aharoni, Column 9, lines 20-26).

8. With respect to claim 4, it is rejected for the same reasons as claim 1 above. In addition Aharoni as modified discloses in which each computed needed buffer fullness (Zhu, Column 4,

Art Unit: 2157

lines 32-41) is the difference between (a) the time needed to transmit, at the relevant rate, the portion in question and zero or more consecutive subsequent portions up to and including any particular portion (Aharoni, Column 2, lines 15-28), and (b) the difference between the playing instant of the respective particular portion and the playing instant of the portion preceding the portion in question (Aharoni, Column 17, lines 40-49).

9. With respect to claim 5, it is rejected for the same reasons as claim 1 above. In addition Aharoni as modified discloses in which the sequence is a video sequence (Aharoni, Column 17, lines 40-49).

10. With respect to claim 6, it is rejected for the same reasons as claim 1 above. In addition Aharoni as modified discloses in which the sequence is an audio sequence (Aharoni, Column 18, lines 36-37; i.e. AVI can just be an audio sequence).

11. With respect to claim 7, Aharoni discloses a storage medium for storing a video recording (Aharoni, Column 7, lines 49-55), comprising

j. a plurality of encoded versions of the same sequence (Aharoni, Column 2, lines 29-32), wherein each version comprises a plurality of discrete portions of data (Aharoni, Column 2, lines 32-39; i.e. discrete portions of data = subset of levels) and each version corresponds to a respective different degree of compression (Aharoni, Column 2, lines 20-21; i.e. different degree of compression = ...the system adjusts the compression ratio);

Art Unit: 2157

k. and that would occur were that portion to be sent at the respective nominal rate (Aharoni, Column 17, lines 52-59);

l. that would occur were that portion and any number of subsequent portions subsequent thereto to be sent at the respective nominal rate (Aharoni, Column 17, lines 52-59).

Aharoni does not disclose for each discrete portion of each version and for each of a plurality of nominal transmitting rates, a maximum value of current buffer fullness for that portion, being the maximum of (a) the value needed to avoid buffer underflow.

However, Zhu discloses for each discrete portion of each version and for each of a plurality of nominal transmitting rates, a maximum value of current buffer fullness for that portion, being the maximum of (a) the value needed to avoid buffer underflow (Zhu, Column 3, lines 3-16).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the teachings of Aharoni with the teachings of Zhu in order to have an efficient stream selection system and increase the quality and reliability of stream transmissions.

12. With respect to claim 8, Aharoni discloses storage medium for storing an audio recording stored (Aharoni, Column 7, lines 49-55), comprising

m. a plurality of encoded versions of the same sequence (Aharoni, Column 2, lines 29-32), wherein each version comprises a plurality of discrete portions of data (Aharoni, Column 2, lines 32-39; i.e. discrete portions of data = subset of levels) and each version

corresponds to a respective different degree of compression (Aharoni, Column 2, lines 20-21; i.e. different degree of compression = ...the system adjusts the compression ratio);

n. and that would occur were that portion to be sent at the respective nominal rate (Aharoni, Column 17, lines 52-59);

o. that would occur were that portion and any number of subsequent portions subsequent thereto to be sent at the respective nominal rate (Aharoni, Column 17, lines 52-59).

Aharoni does not disclose for each discrete portion of each version and for each of a plurality of nominal transmitting rates, a maximum value of current buffer fullness for that portion, being the maximum of (a) the value needed to avoid buffer underflow.

However, Zhu discloses for each discrete portion of each version and for each of a plurality of nominal transmitting rates, a maximum value of current buffer fullness for that portion, being the maximum of (a) the value needed to avoid buffer underflow (Zhu, Column 3, lines 3-16).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the teachings of Aharoni with the teachings of Zhu in order to have an efficient stream selection system and increase the quality and reliability of stream transmissions.

13. With respect to claim 9, Aharoni discloses a store (Aharoni, Column 16, lines 50-60; i.e. store = database) storing a plurality of encoded versions of the same sequence (Aharoni, Column 2, lines 29-32), wherein each version comprises a plurality of discrete portions of data (Aharoni,

Column 2, lines 32-39; i.e. discrete portions of data = subset of levels) and each version corresponds to a respective different degree of compression (Aharoni, Column 2, lines 20-21; i.e. different degree of compression = ...the system adjusts the compression ratio);

- p. a transmitter (Aharoni, Column 17, lines 19-21); and
- q. control means operable to receive data as to the data rate permitted by the network and data as to the state of fullness of a receiving buffer at the terminal (Aharoni, Column 3, lines 65-67 continued through to Column 4, lines 1-7).
- r. select one of said versions for transmission, in dependence on the results of said comparisons (Aharoni, Column 2, lines 60-61).

Aharoni does not disclose for at least one candidate version, compute in respect of at least one discrete portion thereof as yet unsent the maximum value of current buffer fullness that would be needed to avoid buffer underflow were any number of portions starting with that portion to be sent at the permitted rate, to compare the determined maximum needed buffer fullness value(s) with the current buffer fullness state.

However, Zhu discloses for at least one candidate version, compute in respect of at least one discrete portion thereof as yet unsent the maximum value of current buffer fullness that would be needed to avoid buffer underflow were any number of portions starting with that portion to be sent at the permitted rate (Column 3, lines 3-16), to compare the determined maximum needed buffer fullness value(s) with the current buffer fullness state (Column 3, lines 16-26).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the teachings of Aharoni with the teachings of Zhu in order to have an efficient stream selection system and increase the quality and reliability of stream transmissions.

14. With respect to claim 10, Aharoni as modified discloses a store (Aharoni, Column 16, lines 50-60; i.e. store = database) storing a plurality of encoded versions of the same sequence (Aharoni, Column 2, lines 29-32), wherein each version comprises a plurality of discrete portions of data (Aharoni, Column 2, lines 32-39; i.e. discrete portions of data = subset of levels) and each version corresponds to a respective different degree of compression (Aharoni, Column 2, lines 20-21; i.e. different degree of compression = ...the system adjusts the compression ratio), were any number of portions starting with that portion to be sent at the respective nominal rate (Aharoni, Column 17, lines 52-59);

- s. a transmitter (Aharoni, Column 17, lines 19-21); and
- t. control means for receiving data as to the data rate permitted by the network and data as to the state of fullness of a receiving buffer at the terminal (Aharoni, Column 3, lines 65-67 continued through to Column 4, lines 1-7).
- u. select one of said versions for transmission, in dependence on the results of said comparisons (Aharoni, Column 2, lines 60-61).

Aharoni does not disclose for each version including, for each of a plurality of nominal transmitting rates, computing in respect of at least one discrete portion thereof the maximum

value of current buffer fullness that would be needed to avoid receiving buffer underflow at the terminal; for at least one candidate version, to use the permitted data rate and the stored maximum needed buffer fullness values to estimate a respective maximum needed buffer fullness value corresponding to said permitted data rate, to compare the estimated maximum needed buffer fullness values(s) with the buffer fullness state.

However Zhu discloses that for each version including, for each of a plurality of nominal transmitting rates, computing in respect of at least one discrete portion thereof the maximum value of current buffer fullness that would be needed to avoid receiving buffer underflow at the terminal (Zhu, Column 3, lines 3-16); for at least one candidate version, to use the permitted data rate and the stored maximum needed buffer fullness values to estimate a respective maximum needed buffer fullness value corresponding to said permitted data rate (Column 3, lines 3-16), to compare the estimated maximum needed buffer fullness values(s) with the buffer fullness state (Column 3, lines 16-26).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the teachings of Aharoni with the teachings of Zhu in order to have an efficient stream selection system and increase the quality and reliability of stream transmissions.

Response to Arguments

16. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARSHALL MCLEOD whose telephone number is (571)270-3808. The examiner can normally be reached on Monday - Thursday 6:30 a.m-4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marshall McLeod

/Ario Etienne/
Supervisory Patent Examiner, Art Unit 2157